



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,192	07/31/2001	Tracy D. Powers	P5387	3966

32658 7590 06/21/2005

HOGAN & HARTSON LLP
ONE TABOR CENTER, SUITE 1500
1200 SEVENTEEN ST.
DENVER, CO 80202

EXAMINER

REFAI, RAMSEY

ART UNIT PAPER NUMBER

2152

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,192

Applicant(s)

POWERS ET AL.

Examiner

Ramsey Refai

Art Unit

2152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --.

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-11 and 17-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This is responsive to Amendment received March 17, 2005.

Claim 7 has been amended. Claims 8 and 12 have been canceled. Claims 1-7, 9-11, and 17-20 are now presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 7, 11, and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Jantz et al (U.S. Patent No. 6,584,499).

4. As per claim 7, Jantz et al teach a method for remotely reconfiguring a data storage system, comprising:

installing a storage management host within a client data storage system (**column 3, lines 1-9; controller**) and communicatively linking the storage management host to a remotely-located reconfiguration system and to a master storage unit in the client data storage system (**Figure 1**);

monitoring the client data storage system (**column 4, lines 15-40**);

based on the monitoring, transmitting a recommended reconfiguration for the master storage unit (**column 8, lines 5-21**);

at the remotely-located reconfiguration system, receiving a reconfiguration request for the client data storage system (**column 5, lines 60-67, column 16, lines 28-40, column 22, lines 16-46, column 13, lines 42-67**);

in response to the receiving of the configuration request, determining a first configuration of the master storage unit with the remotely-located reconfiguration system (**column 15, lines 5-18**);

transferring from the reconfiguration system a logical implementation of a data storage system configuration to the storage management host the logical implementation being generated based on the reconfiguration request, the first configuration and results of monitoring (**column 2, lines 22-27, column 3, lines 1-22, column 24, lines 11-13**),; and

executing the logical implementation to reconfigure the master storage unit from the first to a second configuration (**column 3, lines 1-22**).

5. As per claim 11, Jantz et al fail to show a method including remotely verifying and testing the second configuration (**column 2, lines 27-41**).

6. As per claim 17, Jantz et al teach a method for remotely reconfiguring a data storage system, comprising:

installing a storage management host within a client data storage system,
the client data storage system having a first configuration (**column 3, lines 1-9; controller**);

communicatively linking the storage management host to a remotely located reconfiguration system (**Figure 1, 120**) and to a master storage unit in the client data storage system (**Figure 1**);

receiving a reconfiguration request for the client data storage system at the remotely-located reconfiguration system (**column 15, lines 5-18**);

determining with the remotely-located reconfiguration system a first configuration of the client data storage system including the master storage unit (**column 8, lines 5-21; column 2, lines 13-22**);

identifying a level of reconfiguration services from a plurality of service level options for the client data storage system (**column 21, lines 25-42; identifying software version**);

defining a logical implementation for the client data storage system based on the identified level of reconfiguration services and the first configuration (**column 2, lines 12-27**);

transferring from the reconfiguration system a logical implementation of a data storage system configuration to the storage management host (**column 3, lines 1-22**); and

executing the logical implementation to reconfigure the master storage unit from a first to a second configuration (**column 3, lines 1-22**).

7. As per claim 18, Jantz et al teach wherein the service level options comprise services selected from the group consisting of changing logical unit number (LUN) size, cache blocking, establishing hot standby, changing RAID, logically moving the master storage unit or a portion

thereof, changing mainframe device type, adding channels, increasing performance, and providing ongoing configuration monitoring (**column 5, lines 12-23**).

8. As per claim 19, Jantz et al teach remotely verifying and testing the second configuration (**column 2, lines 27-41**).

9. As per claim 20, Jantz et al teach prior to the receiving the reconfiguration request, monitoring the client data storage system and based on the monitoring, issuing a recommended reconfiguration for the client data storage system (**column 2, lines 42-67**).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 4, 5, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jantz et al (U.S. Patent No. 6,584,499) in view of Axberg et al (U.S. Patent No. 6,009,466).

12. As per claim 1, Jantz et al show a reconfiguration computer system comprising:
a storage management host installed in a client data storage system having a first configuration (**column 3, lines 1-9; controller**) and comprising at least one master storage unit

for storing data and providing access to the stored data (**column 1, lines 39-41, Figure 1, 124 and Figure 2, 204**) and one host linked to the master storage unit (**Figure 1, 122, 132, 134**), and further wherein the storage management host is communicatively linked to and adapted to provide remote access to the master storage unit and the host (**Figure 1, controller 128, 130**); and

a reconfiguration center communicatively linked to the storage management host (**Figure 1, servers 126, 132, 134, 148 communicate to management station 120 using LAN 102**), the reconfiguration center being located remote to the client data storage system (**Figure 1, 120**) and configured for receiving a reconfiguration request for the client data storage system (**column 15, lines 5-18**) and for, in response to the received reconfiguration request transferring a logical implementation of a second configuration to the client data storage system via the storage management host (**column 2, lines 13-22**), wherein the client data storage system is operable to process the logical implementation to configure the data storage system in the second configuration (**column 3, lines 1-9**), wherein the logical implementation is selected or created based on the reconfiguration request and the first configuration (**column 2, lines 22-27**).

13. Jantz et al fails to show the use of a data storage subsystem.

14. However, Axberg et al show the concept of a storage subsystem (**column 1, lines 45-61**).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Jantz et al and Axberg et al to create a reconfiguration system using an alternative storage subsystem because it would provide a great degree of independence from a host computer system when implementing such reconfigurations on data storage systems.

15. As per claim 4, Jantz et al fails to teach the concept of a subsystem and a subsystem, wherein the master storage unit of the second data storage subsystem is a different type of data storage device than the master storage unit of the other data storage subsystem.

16. However, Axberg et al show the use of a subsystem (**column 1, lines 45-61**) and that data can be stored in one or more mass data storage devices, such as rotating magnetic disk drives or tapes attached to a single computer system (**column 1, lines 13-17 and column 2, lines 28-44**).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use more than one subsystem in a reconfiguration system and to use a subsystem with two different storage units of different types because it would increase the storage capacity, speed, reliability, and increase cost effectiveness. It would allow for files less frequently used to be moved a slower but less expensive form of storage.

17. As per claim 5, Jantz et al fails to show a service level options comprises services selected from the group consisting of changing logical unit number (LUN) size, cache blocking, establishing hot standby, changing RAID, logically moving the master storage unit or a portion thereof, changing mainframe device type, adding channels, increasing performance, and providing ongoing configuration monitoring (**column 5, lines 12-38**).

18. As per claim 9, Jantz et al fails to show a method including identifying a predetermined level of reconfiguration services from a plurality of service level options and creating the logical implementation based on the identified level of reconfiguration services.

19. However, Axberg et al shows a method for identifying a predetermined level of reconfiguration services from a plurality of service level options and creating the logical implementation based on the identified level of reconfiguration services (**column 2, lines 47-column 3, lines 1-22**). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Jantz et al and Axberg et al to create a method for reconfiguring data on a storage system by identifying a predetermined level of reconfiguration services and creating the logical implementation based on the identified level of reconfiguration services in order assist a user planning the configuration of devices.

20. As per claim 10, Jantz et al teach a service level options comprises services selected from the group consisting of changing logical unit number (LUN) size, cache blocking, establishing hot standby, changing RAID, logically moving the master storage unit or a portion thereof, changing mainframe device type, adding channels, increasing performance, and providing ongoing configuration monitoring (**column 5, lines 12-38**).

21. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jantz et al (U.S. Patent No. 6,584,499) in view of Axberg et al (U.S. Patent No. 6,009,466) as applied to claim 1 above, and further in view of Vacon et al (U.S. Patent No. 5,151,895).

22. As per claims 2 and 3, Jantz et al and Axberg et fail to show a computer system, wherein the storage management host is a terminal server configured to provide Ethernet connection to a

local area network (LAN) connected to the host and the master storage unit and further configured to provide a serial connection with the master storage unit.

However, Vacon et al show a terminal server device provides connection between terminals which operate asynchronously to transmit data to and receive data from the LAN typically dedicated to a plurality of terminals via serial data lines originating from the terminal server and terminating at respective terminals. The terminal server also provides a node for connection to the LAN. The LAN provides for packet data transmission between the terminal server and the host computer (**column 1, lines 24-34**).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Jantz et al, Axberg et al, and Vacon et al to create a remote reconfiguration system wherein the storage management host is a terminal server that provides Ethernet connection because doing so would help establish a communication between a number of terminals and host computers.

23. Claim 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jantz et al (U.S. Patent No. 6,584,499) in view of Axberg et al (U.S. Patent No. 6,009,466) in further view of "Official Notice".

24. As per claim 6, Axberg et al show that a reconfiguration computer system can include a modem (**column 1, lines 13-14 and column 15 lines 67- column 16 line 3**).

25. Jantz et al and Axberg et al fail to show the use of a dialback modem wherein the dialback modem is adapted to respond to a connection initiated from the modem by requesting

entry of a password, to verify an entered password, to upon verification of the password disconnect the connection and initiate a connection to the modem. "Official Notice" is taken that both the concept and advantages of using a dialback modem is well known and expected in the art. The secure dial-back modem is configured to limit connection attempts, e.g., permit only two attempts, before automatic disconnect. The connection is then broken. The modem at the monitored system then dials back the service center. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a dialback modem in a reconfiguration system to authenticate a user in order to prevent unauthorized use.

Response to Arguments

26. Applicant's arguments have been fully considered but they are not persuasive.

- In the remarks, the applicant argues in substance that:
 - a. Jantz fails to teach receiving a reconfiguration request or in response, determining the first configuration of the master storage unit;
 - b. Jantz fails to teach transmitting/issuing a recommended reconfiguration based on monitoring;
 - c. Jantz fails to teach defining a logical implementation based on an identified level of service and on a first configuration,;
- In reply to:
 - a. Examiner respectfully disagrees because Jantz does teach receiving reconfiguration request. The request for reconfiguration is being sent from the I/O management stations and also is being sent as events from the controllers, events such as "needs attention" to

the management stations. Once the events are received, a user at the management station can then perform management tasks such as modify existing configuration or update controller software, etc. (see column 9, lines 41-47, column 5, lines 58-67, column 22, lines 16-62, column 8, lines 5-12, column 13, lines 42-67).

- b. Examiner respectfully disagrees because Jantz does teach a user at a management station that monitors storage systems and based on the monitoring and events received, can then modify/update existing configurations to operate at an optimal level. (see column 4, lines 16-38, column 7, lines 20-65).
- c. Examiner respectfully disagrees because Jantz does teach that a management station monitors storage system and updates the configuration based on the existing configuration and the version level of the managed devices (see column 4, lines 16-38, column 3, line 56-column 2, line 10, column 7, line 39-column 8, line 21)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Refai whose telephone number is (571) 272-3975. The examiner can normally be reached on M-F 8:30 - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramsey Refai
Examiner
Art Unit 2152

RR
June 11, 2005

 **JOHN FOLLANSBEE**
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100